What is claimed is:

1.   A digital filter for extracting a frequency component from a data signal, comprising:

a first selection member for selecting one item of data from a plurality of data included in the data signal;

a second selection member for selecting one coefficient by which the data selected by the first selection member is multiplied, from a plurality of coefficients;

a multiplication member in which the data selected by the first selection member is multiplied by the coefficient selected by the second selection member; and

an adding member for adding multiplied results from a plurality of multiplication members.

2.   The digital filter as claimed in claim 1, wherein the data signal is a data signal in which a "0" is inserted so as to carry out zero value interpolation; and

wherein the first selection member selects data other than the inserted "0" from the plurality of the data.

3.   The digital filter as claimed in claim 1, wherein the digital filter is an FIR filter.

4.   A data processing method for extracting a

frequency component from a data signal, comprising:

a first selecting step for selecting one item of data from a plurality of data included in the data signal;

a second selecting step for selecting one coefficient by which the data selected in the first selecting step is multiplied, from a plurality of coefficients;

a plurality of multiplying steps for multiplying the data selected in the first selecting step by the coefficients selected in the second selecting step; and

an adding step for adding multiplied results in a plurality of multiplying steps.

5.   The data processing method as claimed in claim 4,

wherein the data signal is a data signal in which a "0" is inserted so as to carry out zero value interpolation; and

wherein in the first selecting step, data other than the inserted "0" is selected from the plurality of the data.

6.   A digital filter comprising:

a first selection member for selecting one item of data from a plurality of data inputted into the digital filter;

a second selection member for selecting one predetermined coefficient from a plurality of coefficients

inputted into the second selection member; and

a multiplication member in which the data selected by the first selection member is multiplied by the coefficient selected by the second selection member.

7. The digital filter as claimed in claim 6, further comprising: an adding member for adding multiplied results from a plurality of multiplication members.

8. The digital filter as claimed in claim 6, wherein the digital filter is an FIR filter.